

THE TOTAL, ELASTIC- AND INELASTIC-SCATTERING
FAST-NEUTRON CROSS SECTIONS OF NATURAL CHROMIUM*

by

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ABSTRACT

Neutron total cross sections of natural chromium were measured from 1.0 to 4.5 MeV with intermediate energy resolution at intervals of $\lesssim 50$ keV. Elastic- and inelastic-differential-scattering cross sections were determined over the energy and angular range of 1.5 - 4.0 MeV and 20 - 160 degrees, respectively. Cross sections were measured for inelastic-excitation neutron-groups corresponding to average Q-values of: 1.433 ± 0.009 , 2.377 ± 0.008 , 2.665 ± 0.005 , 2.778 ± 0.007 and 2.970 ± 0.006 MeV. The results were examined in terms of the spherical optical-statistical model. The contribution of vibrational direct-excitation to the 1.433 state was assessed.

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